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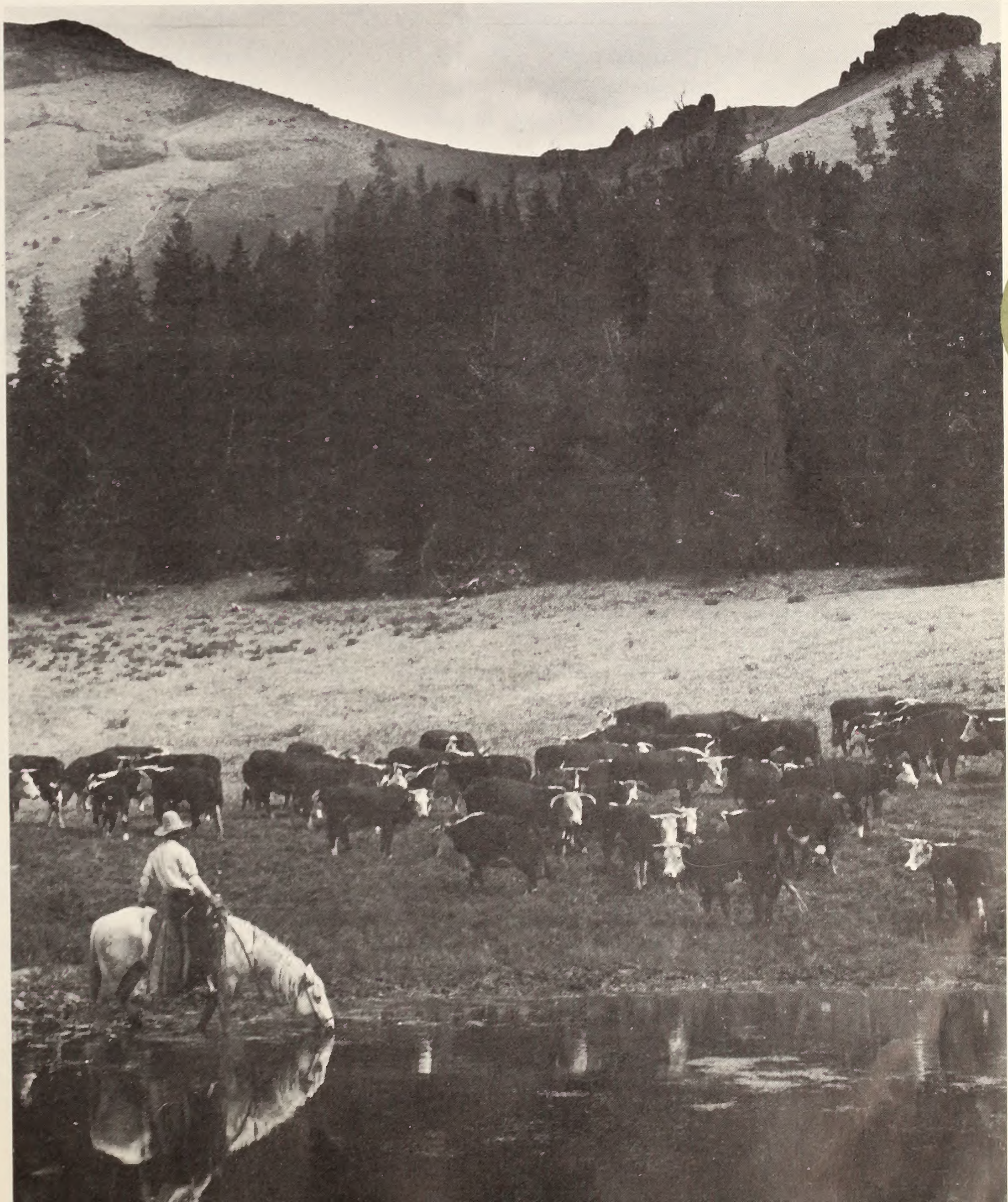
Our PUBLIC LANDS

BUREAU OF LAND MANAGEMENT



JULY 1961 • Volume 11, Number 1

OUR PUBLIC LANDS . . .

> *"Conservation is a state of harmony between men and land. By land is meant all of the things on, over, or in the earth. Harmony with land is like harmony with a friend; you cannot cherish his right hand and chop off his left. That is to say, you cannot love game and hate predators; you cannot conserve the waters and waste the range; you cannot build the forest and mine the farm. The land is one organism. Its parts, like our own parts, compete with each other and cooperate with each other. The competitions are as much a part of the inner workings as the cooperations. You can regulate them—cautiously—but not abolish them."*
>
> (*From* "Round River—From the Journals of Aldo Leopold," edited by Luna B. Leopold, Oxford University Press, 1953.)

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COVER

As President John F. Kennedy said in his special message on natural resources sent to Congress February 23, 1961, "every nation's basic wealth and progress has stemmed in large measure from its natural resources. This nation has been, and is now, especially fortunate in the blessings we have inherited. Our entire society rests upon—and is dependent upon—our water, our land, our forests, and our minerals. How we use these resources influences our health, security, economy, and well-being." For more about natural resources and the national land reserve turn to page 6.

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UNITED STATES

DEPARTMENT OF THE INTERIO

BUREAU OF LAND MANAGEMEN

Washington 25, D.C.

The printing of this publication has been approved by the Director of the Bureau of the Budget, February 25, 1960.

DEPARTMENT OF THE INTERIOR

Stewart L. Udall, Secretary

BUREAU OF LAND MANAGEMENT

Karl S. Landstrom, Director

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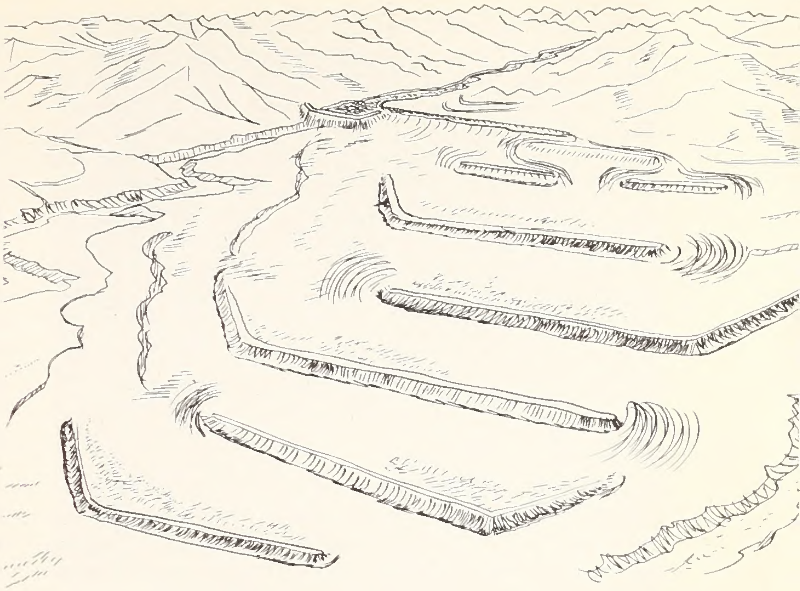
WATERSHED CONSERVATION

by **KARL S. LANDSTROM, *Director, BLM***



Editor's Note: The following remarks were made before the Eighth National Watershed Congress, Tucson, Arizona, April 19, 1961.

"I LOVE THY ROCKS AND RILLS, thy woods and templed hills." These familiar phrases express the personal interest that all of us have in the conservation of natural resources.

If it is important for the Government to contribute to the protection of watersheds on privately owned lands, how much more important it is to insure that watersheds owned by the Government be protected.

I seem to recall that my high school economics textbook defined "water" as a free gift of nature. As water becomes scarcer, it is becoming more and more a commodity to be provided through economic effort. Watershed protection should not be viewed merely as a side effect or by-product of commercial land uses, but as a productive economic activity.

One of my duties as Director of the Bureau of Land Management is to carry out the laws and regulations dealing with watershed protection of the *national land reserve.* These lands, consisting of nearly 177 million acres in 10 western States, are administered through the Bureau under a program of balanced usage.

Let us bear in mind that one of the stated purposes of the Congress, in enacting the Taylor Grazing Act of 1934, was "to stop injury to the public grazing lands by preventing overgrazing and soil erosion." This objective has yet to be realistically achieved.

Our task in administering the public lands has been simplified and strengthened by the clear-cut mandate contained in President Kennedy's natural resources message of February 23. Under the direction of Secretary of the Interior Stewart L. Udall, the President's mandate is being carried into effect as rapidly as possible.

One reason I am happy to write on this subject is that it permits me to reminisce about certain watershed treatment studies in Arizona in which I participated some years ago.

I am not a physical scientist. Professionally, I am a land economist and an attorney-at-law. However, one can't rub elbows with foresters, engineers, and range examiners over the years without picking up many of the technical ideas and a lot of the jargon.

My connection with upstream conservation work began at an early Soil Conservation Service project manned by a company of the Civilian Conservation Corps which I commanded. Those were the days of trials and error in soil conservation. I am sure that great strides in technical progress and methods of operations have occurred since those days.

Later on, I joined with Forest Service technicians in the study of watershed treatment plans in the Upper Gila River watershed and other Southwestern areas. It was there that I first became aware of the manifold problems of conserving and managing public lands.

In these experiences in the Department of Agriculture, and later in the Department of the Interior, I have been impressed by the constant search for knowledge, not only as to the physical facts needed for conservation work, but also as to human aspects related to accomplishment of needed work within our institutional framework of society.

I will not dwell on the technical aspects of measures being installed or planned for public lands, nor with their physical attributes. Instead I will consider the problem of getting needed treatment measures applied on the ground through our social and economic processes. This is what we sometimes call the *problems of implementation.*

"Land and water resources are inseparable, and therefore watershed improvement programs are a basic and extremely important part of the Nation's overall water resources development program." This statement from the recent report of the Senate Select Committee on National Water Resources is eminently sound. The extensive areas administered through the Bureau of Land Management are sources of *water for a thirsty land.* Unfortunately all too often the water flowing from these areas is unreliable and is accompanied by excessive sediments and silt.

The physical characteristics and location of the national land reserve complicate the problem of achieving watershed conservation. These lands include about every kind of watershed condition. However, in general, the lands usually are not radically different from nearby State and privately owned properties in their physical characteristics. Many of the problems facing public land administrators also face private landowners when they try to make decisions about conservation investments. In fact, such decisions tend to be more complicated for the public land administrator than they are for the owner of private land.

There is no necessary magic in the mere fact of government ownership, any more than that the mere ownership of a ranch by an operator will assure conservation of the privately owned range. Let me give you some idea of what I mean.

In theory, at least, a private landowner who is thinking about improving his land makes some sort of analysis that shows whether he will get back more money from his investment than he puts into it. I say that this is "in theory," because I have come across the practical realities of how people think and what actually occurs. I have seen some ranchers who seem to be concer only about production of the land in the y immediately ahead, or in the real estate values o their property. I have seen others who have in mind leaving the land in the same condition as they found it or in a better condition, if possible. They view this contribution as an investment in tomorrow or an obligation to generations ahead.

It is not easy to make accurate estimates about the costs and returns of rangeland improvements. At some rangeland conservation projects, benefit-cost analyses have been made. Such studies may be compared to studies of the economic feasibility of reclamation projects. These studies are always the subject of challenge and debate. Some may feel, I suspect, that benefit-cost ratios are a good thing if the results agree with opinions already formed. On the other hand, if benefit-cost studies turn out unfavorable, the tendency may be to presume that an error was made in the calculations.

Without implying anything in particular about the feasibility of reclamation projects, I venture to say that many rangeland projects are available with equivalent or superior economic justification from the standpoint of range forage production alone, without regard to additional favorable effects in wildlife, recreation, and watershed protection.

While the experts are further developing economic measurements of investment opportunities in natural resources, we who are administrat no doubt should apply a great deal or ordina common sense in making our decisions. I alway like to allow considerable room for what might be called "self-evident truths" or "informed public opinion." I believe that the wishes and desires

THE NATIONAL LAND RESERVE is administered under a program of balanced use. Grazing, recreation, watershed protection and other uses are considered in setting up management plans.

of informed local people should have a large part play in program formulation. Not just one up, but all interested persons should have a chance to contribute their ideas.

Watershed conservation projects on lands administered by the Bureau of Land Management are in three categories. First, there are projects built by the Government entirely with Government funds.

Second, some projects are constructed under cooperative or joint agreements under which the Government puts up part of the funds and the range user puts up another part. Sometimes, these improvements are built at the Government's suggestion to benefit the public lands as well as rancher's grazing operations.

A third type of project—involving probably the majority of improvements is financed entirely by stockmen under permits issued by the Bureau of Land Management. Private investment for public land conservation projects has amounted to several million dollars.

The long term program for the conservation of public lands should involve a balance between all three kinds of investments. The task of restoring public lands is a task for everyone; range users are entitled to be called *conservationists* to the extent that they practice conservation and aid in its accomplishments.

We must be aware of the part that other local citizens—not just the land users—can play in tting programs carried out.

I am glad to note the recent action by Secretary Freeman to reinforce the Rural Areas Development Program in his department. He has established a Rural Areas Development Board with membership from 11 departmental agencies. One of the objectives is to stimulate local initiative to develop more efficient family farms and greater local opportunity. This is done through many ways, including soil, water, and forest improvement and conservation of resources. I am sure that Secretary Udall and the Department of the Interior will cooperate in this program.

The means available to Secretary Udall to carry out conservation of public lands include many ways in which local people may cooperate.

There have been charges, however, that worthwhile treatment or conservation measures on public lands have not been installed because of opposition from range users. There is a further repeated charge that range users, through the Grazing Advisory Boards are the ones who really decide what will be done with the Federal range.

What specifically are these criticisms? For the most part, they concern either the working relationships between the grazing advisory boards and the Government offices they advise, or else what has been called the narrow perspective of range users toward the balanced usage of public lands. This conflict in interests comes to light, r example, when range use permits are adjusted downward for the purpose of protecting and restoring the range.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SUGAR LOAF
RANGE CONSERVATION PROJECT
CRESTED WHEATGRASS
SEEDINGS

BLM is conducting and cooperating in many watershed and conservation studies.

The Taylor Grazing Act and the Federal Range Code limit precisely the function of the grazing boards to an advisory role. The boards lack the legal capacity to make any final decision.

I will strongly support the authority delegated to Bureau field officers, as well as the authority delegated to me by the Secretary, to make decisions affecting public lands without favor or prejudice. At the same time, I will defend the right of a range user to appeal or to have a fair hearing from an adverse decision, and I will always welcome constructive suggestions for the improvement of the system.

A proposal has been made to extend the types of representation on the boards at the district, State and national levels. The growing importance of outdoor recreation, watershed protection, mineral development, timber sources, and water supply has given rangelands added values. Many people have suggested that broader sources of counsel and advice are needed, and these suggestions are now being considered.

In some parts of the country, amid checkerboards remaining from the days of land grants, the lands in the national land reserve are intermingled with private and State lands. The pattern as between two or more Federal agencies is itself sometimes complicated. A complicated land pattern adds to operating costs, discourages private

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NATURAL RESOURCES

and the national land reserve

THE BASIC RESOURCE of every Nation is its land. From the land comes the resources, the food, and the space necessary for life. Our Nation has been endowed with many of resources we need. So far nature has been generous with our mistakes.

As President Kennedy said in his special message on natural resources sent to Congress last February 14—"our entire society rests upon, and is dependent upon, our water, our land, our forests, and our minerals. How we use these resources influences our health, security, economy, and well-being.

"But if we fail to chart a proper course of conservation and development—if we fail to use these blessings prudently—we will be in trouble within a short time."

THE NATIONAL LAND RESERVE covers some 477 million acres in 11 western States.

The scale of predictable future needs will not allow us to resist our clear responsibilities for proper conservation and development of the Nation's land base—on both public and private lands. To meet our Nation's goals, the Department of the Interior is under mandate to manage public lands and resources wisely, to prevent waste and destructive exploitation, and to preserve and protect the priceless heritage and destiny of the public resources in the Department's trust.

The 477-million acre national land reserve un the stewardship of the Department's Bureau Land Management is a vital national storehouse of land and resources. These lands, located chiefly in 11 western States, have enormous present and potential value to every section of the country.

But much of this land needs the healing hand of conservation. Nearly one-third of the usable land in Federal grazing districts is in poor or bad condition. About one-fifth of these lands is still being allowed to deteriorate and decline. Every year the cancerous spread of poisonous range weeds eats into areas that once supported succulent stands of good forage for wildlife and livestock. And every hour tons of precious topsoil are scoured off naked slopes to silt our streams, clog our irrigation systems, pollute our water, and be lost to us forever in a headlong dash for the sea.

Too little is known about these lands and about the wealth of natural and scenic resources which they harbor. Inadequate data has supported inadequate management.

But it will not be enough simply to accelerate or expand existing conservation measures. New ideas, new administrative and technical arrangements, and where necessary, new legislation must provide balanced programs for the management of public lands in the broad national public interest.

The Department also has a broader responsibi ity to set an example by word and deed and to adly share its technical skills and knowledge facilitate and assure the conservation and wise management of all of the lands of the Nation's resource base. This responsibility will require close cooperation with other agencies having complimentary goals.

In the field of public lands President Kennedy, in his special message on natural resources, directed the Secretary of the Interior to:

(1) accelerate an inventory and evaluation of the Nation's public domain holdings to serve as a foundation for improved resource management

(2) develop a program of balanced usage designed to reconcile the conflicting uses—grazing, forestry, recreation, wildlife, urban development and minerals; and

(3) accelerate the installation of soil conserving and water saving works and practices to reduce erosion and improve forage capacity; and to proceed with the revegetation of range lands on which the forage capacity has been badly depleted or destroyed.

Inventory and Classification

The national land reserve is the remnant of 150 years of operation under the public land and mineral laws. There is pressing need for an inventory and evaluation of this resource. The public land must be classified for its highest and best use. Major land tenure adjustments must provide ficient units for resource management in both blic and private ownership.

The Bureau of Land Management must identify and set up a system of land and resource management units. These areas will serve as the basic unit for classification, inventory, and evaluation. Detailed management data will then be developed on the basis of which sound tenure and resource decisions can be made.

Public lands will be classified where appropriate for transfer to State and local agencies and individuals to provide for expansion of local economies. Initial inventories will be accelerated and completed within two years. High priority will be given to identifying and planning for present and potential areas for public recreation and scenic enjoyment.

Classification of public land and land tenure adjustments must substantially be accomplished in the 1960's. This will require an immediate five fold increase over present activity. Implementation of this land inventory and evaluation program will involve proposals for changes in the public land laws.

An inventory and classification program for the public lands will offer large benefits to the Nation. It will provide units for long-term management of land, outdoor recreation, wildlife, minerals, soil, water, forests, and grass. It will provide strategically located public land to meet the mounting ed for outdoor recreation. It will provide land for the expanding economy of the western States and cities. The return to the Nation in direct and indirect benefits will far exceed cost.

Program for balanced use

New programs (and in some cases new legislation) are needed to develop and support balanced use of the public lands—grazing, forestry, recreation, wildlife, urban development, and minerals. At present inadequate information is available about the physical and economic characteristics of the public lands. Major on-the-ground studies of soils, water, forage, timber and other resources need to be combined with data on recreation and other public uses, economic values, and potential future uses to provide a sound foundation for long-term tenure arrangements in orderly patterns of resource use.

New arrangements should provide better opportunities for considering all aspects of resources management in the development of programs and projects. For example, study will be made of the feasibility of including wildlife and waterfowl habitat and public recreation development at major soil and moisture conservation projects constructed by the Bureau of Land Management. The added cost of providing a permanent body of water behind large watershed structures for public recreation, particularly in the Southwest where opportunities for water-side recreation are limited, may be small in comparison with the benefits.

ANNUALLY TONS of topsoil are swept from some of our western watersheds.

Greatly accelerated research should be undertaken on techniques of resource development and of the impact and significance of public resource programs and policies on private resource investment and development.

For each major land area, comprehensive man-

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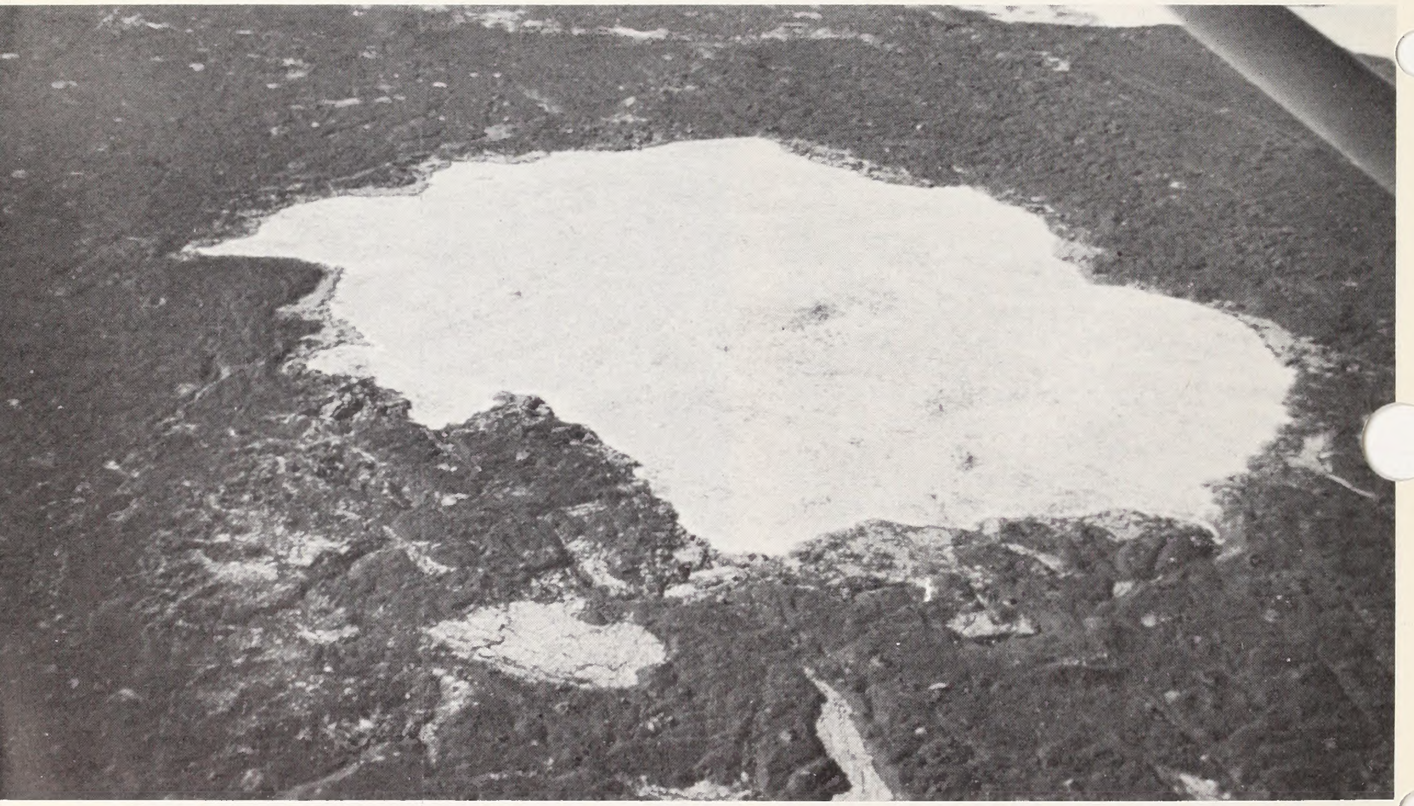
RESEARCH ISLAND?

by **DONOVAN YINGST**, *Appraiser, Boise, Idaho, BLM* and **HARLEY M. HANDY**, *Range Manager, Shoshone, Idaho, BLM*



AERIAL VIEW of kipuka surrounded by a sea of lava.

RANGE TECHNICIANS are continually faced with the problem of trying to determine optimum range conditions by visualizing how a range looked prior to grazing by livestock. Technicians who can find an ungrazed or relict area for comparison are fortunate indeed. Such an area lies about 14 miles east of Carey, Idaho, in the lava flows adjacent to the Craters of the Moon National Monument.

These lava flows and surrounding territory are unique in many ways and have provided numerous contributions to science from the standpoint of geology. The flows are of recent vintage in regard to geologic time and have covered large expanses of older formations. They followed the path of least resistance and, as a result, occasionally surrounded some of the older land forms leaving islands, or kipukas.

The University of Idaho has been conducting range research in southern Idaho for a number years. In 1955, two members of the University staff were looking for suitable study areas near the Craters of the Moon National Monument. They found a small isolated kipuka which was apparently undisturbed by grazing. The following year a study team from the University made a trip into the area. The value of the kipuka for range research was recognized imediately. No evidence of grazing by domestic livestock could be found.

The kipuka covers approximately 185 acres. It is completely surrounded by rough, broken lava beds too rough for domestic livestock to easily cross.

Several other kipukas are located southwest of the monument. The largest, Laidlaw Park, covers approximately 78,000 acres. To the west, and separated from Laidlaw Park at the nearest point by a half-mile strip of lava, is Little Park which covers about 9,000 acres. Laidlaw Park and Little Park are easily accessible to livestock over a road which was built by the stockmen and later improved by the Bureau of Land Management. Both parks are grazed in the spring and fall by sheep and cattle. The northly parts of these two areas have a very good stand of perennial grasses with an overstory of scattered sagebrush.

The terrain of the isolated kipuka is similar to that in Laidlaw Park. It is characterized by a low hill rising some distance above the surrounding lava. The vegetation is very interesting to one who has observed only heavily grazed land. Basically, it is a sagebrush-grass type. Three-tip sagebrush occupies the greater part with big sagebrush being confined mainly to small knolls and southerly slopes. The understory is a mixture of perennial grasses with Idaho fescue predominating. Bluebunch wheatgrass and other perennial grasses are present to a lesser degree. Broadleaf weeds such as balsamroot, hawksbeard and lupine in varying amounts are interspersed with the grasses. Cheatgrass is also found to some degree, particularly near the top of the hill.

This kipuka is especially suited to range vegetation studies. The growth of perennial forage plants fluctuates from year to year, depending on weather conditions. It is very difficult to determine actual annual fluctuations on grazed ranges. There is always uncertainty as to whether the variations are caused by grazing or weather conditions. In the kipuka, a totally protected area, grazing competition does not exist.

Our range lands must be improved wherever possible to provide better watershed protection and more feed for livestock and game. Many areas cannot be rehabilitated by reseeding because of rocky soils, adverse topography and other factors. They can be improved only by establishing and following sound management practices.

It is essential that proper range conditions be determined in any range management program. Range managers continually strive toward optimum production but very seldom reach that goal. Range condition classifications are based primarily on optimum conditions, taking into consideration soil and vegetative relationships. Since most ranges have been altered considerably by grazing and fire, it is very difficult to determine optimum conditions without referral to protected areas. Intensive range studies started far too late for most technicians to see grazing lands in their native condition. Protected relict areas are invaluable and should be maintained for future scientific studies.

ROUGH TRAIL over lava from Laidlaw Park.

The University of Idaho began soil-vegetation studies on the isolated kipuka in 1956. A soil-range team from the Soil Conservation Service started somewhat similar studies in 1958. Permanent study sites have been established by the University and SCS. The sites entail a detailed study of soil and vegetational relationships. The studies differ to some degree between the two agencies, particularly as to the vegetation. The University has established permanent line transects for measuring basal area on each species, bare ground percentage and other related information. SCS measures herbage production and species composition on a weight basis. Both agencies will correlate their findings with soil studies.

This research will greatly benefit range management. The annual measurement of herbage production is of particular value to range technicians. Range technicians and stockmen are primarily interested in the amount of forage that can be produced from any particular range. The studies will help considerably in understanding the relationships between herbage production and soil conditions.

The Soil Conservation Service, the University

(Continued on page 14)

active acres

KILAUEA VOLCANO

Continued rapid swelling of Kilauea Volcano has been recorded by the Geological Survey Hawaiian Volcano Observatory. The Volcano is threatening the Puna District of Hawaii with another eruption. Previous eruptions occurred in 1955 and 1960.

ORGANIZATIONAL SHIFTS

The Bureau of Land Management has undergone organizational shifts which will strengthen the technical and operating staffs at State headquarters and further Federal-State relations in the Western States. Technical functions formerly performed at three regional offices have been consolidated with similar services in the State offices. Organization in Alaska is not affected.

The new organization stresses streamlined avenues of efficient management and provides for quick and easy communication between top management in BLM and its operating programs at the State level.

The organization is the result of a great deal of study by the Department and BLM as to how the Department can best gear itself to meeting the new goals set out in President Kennedy's natural resources message to Congress.

WATERSHED STUDY

BLM has recommended some 3,600 acres in the northern California Coast Range for scientific study of an undisturbed wilderness watershed.

The 3,600 acres are part of the 6,500-acre Elder Creek watershed which drains into the south fork of the Eel River in Mendocino County, about 200 miles north of San Francisco. This magnificent tract is reported to be the last of its kind available for scientific study. The entire drainage basin of a wilderness stream remains virtually intact. The other 2,900 acres in the Elder Creek watershed have been purchased by The Nature Conservancy for scientific investigations of wilderness ecology and watershed management.

The Nature Conservancy, BLM, and the Geological Survey are planning cooperative scientific studies in the area. Such studies will help to determine the best use of the watershed.

MENOMINEE TRIBE

The Department of the Interior has discontinued Federal trust supervision over the tribal property of the Menominee Indians of Wisconsin.

The action was taken under provisions of the Menominee Termination Act of June 17, 1954, as amended, and became effective on midnight April 30.

PADRE ISLAND

The Department of the Interior has recommended early enactment of legislation to create a Padre Island National Seashore in Texas, embracing the longest undeveloped segment of seashore in the United States' portion of the Gulf of Mexico. Padre Island is one of the nine areas which have been identified by a nationwide seashore survey as possessing national significance.

The Island includes the longest barrier beach in the United States and the most extensive reach of natural, undeveloped ocean shore remaining in th continental United States ou side of Alaska.

Enactment of the legislation would authorize the Secretary of the Interior to acquire by donation, purchase, or exchange an area of land and water at Padre Island in Texas comprising an estimated 57,000 acres of dry land, 124,000 acres of land subject to inundation, and 147,000 acres of water, to be established and administered by the National Park Service as the "Padre Island National Seashore." The bill would also permit grantors of title to reserve gas and oil.

CHILDREN'S CAMP NEEDS

A comprehensive report on camping opportunities and needs of children, made by the American Camping Association for the National Park Service, has been issued in booklet form.

The booklet, entitled *Resident Camps for Children, Present Status & Future Needs*, shows the extent to which camps of a types meet present and future needs of American youngsters. It recommends means and standards for increasing the number of resident camps for the Nation's children, and points out that over a third of the camps had to reject applications in 1958 because of lack of space.

A limited number of copies of the booklet are currently available from the Division of Recreation Resources Planning, National Park Service, Department of the Interior, Washington 25, D.C.

ELK CONTROL

Elk hunting on a limited scale will be permitted again in a portion of Grand Teton National Park, Wyoming, during the 1961 hunting season in order to preserve forage resources from abuse through over-grazing.

Grand Teton is the only national park where hunting is permitted. Congress enacted a law in 1950 permitting elk hunting there. 2,000 permits will be available this year. In eight years of hunting in Grand Teton, the annual kill averaged 166 animals. The season opens October 15 and ends November 30.

Application for the special permits are now being accepted by the Wyoming Game and Fish Commission at the Cheyenne Office from the holders of valid elk licenses.

MINERAL LEASING RULES

Federal mineral leasing regulations have been amended to facilitate the development of oil and gas on federally owned lands. The changes carry out amendments to the Mineral Leasing Act of 1920 which were passed by the 86th Congress on September 2, 1960.

The law and new rules extend the primary terms of noncompetitive oil and gas leases from 5 to 10 years. Annual rental rates for noncompetitive leases have been raised to 50 cents an acre for the entire lease term. This rate is the minimum established by Congress.

The new regulations combine the acreage limit for leases and options from 46,080 acres and 200,000 acres respectively in any one State (except Alaska) to 246,080 acres.

The rental rate for competitive leases prior to discovery was raised from $1 an acre per year to $2 an acre per year.

Noncompetitive oil and gas leases will be issued for a single term of 10 years. Competitive leases will continue to be issued for a single term of 5 years. Both leases will continue as long as oil and gas is produced in paying quantities.

ON THE BOOKSHELF

My Wilderness: The Pacific West, by William O. Douglas. (New York, Doubleday & Company, Inc., 1960) 206 pp. Illus.

A new book by Justice William O. Douglas. From the Brooks Range in Alaska to the High Sierras in California, Justice Douglas takes the reader through some of the few unspoiled wilderness areas left in the United States.

Douglas is by preference a walker. He feels that on foot is the only way to find and see the real beauty of the wonderland of flora and fauna, the deeper meaning of the complex jungle growth and mountain heights. The author shows a remarkably vast and precise knowledge of forests, deserts, mountains, birds, mammals, fish, and plains of the eleven major regions he discusses.

The book is a work of science as well as an exciting narration of the thrills of running rapids through boulders and "white water," watching a storm approach a Pacific beach, or fishing for grayling in the wilds of northern Alaska.

Many of the areas Justice Douglas describes are presently the scene of hard battles for the protection of this country's dwindling wilderness resources.

Summary of Mining and Petroleum Laws of the World—Bureau of Mines Information Circular 8017, available from the Superintendent of Documents, Washington 25, D.C., for $1.

The first of its kind ever published in a single volume this book presents highlights of mining and mineral land tenure laws of more than 100 countries. The material is listed in an easy-to-find manner and the 215 page volume includes references to sources of basic information. This permits the reader to obtain other facts if he wishes to study a particular country further.

Some of the smaller nations of the free world are omitted because their meager mineral resources are administered under agricultural or general industrial regulations. All other nations having laws permitting private ownership and development of mineral rights are listed alphabetically within one of nine chapters, grouped by continents. In Federal jurisdictions — such as the United States, Switzerland, Canada and Australia—the laws of the States or provinces are described separately from those of the central government.

The publication is not sold by the Bureau of Mines.

Journey Into Summer, by Edwin Way Teale. (New York, Dodd, Mead & Company, 1960.) 366 pp. Illus.

Ultraviolet Guide To Minerals: with mineral identification charts, by Sterling Gleason. (Princeton, New Jersey, D. Van Nostrand Company, 1960.) 250 pp. Illus.

This Land Of Ours: Community and Conservation Projects for Citizens, by Alice Harvey Hubbard. (New York, The Macmillan Company, 1960.) 272 pages.

NEW MEXICO

New Mexico may use Federal aid funds in the payment of annual rental for hunting and fishing rights on 11,411,000 acres of State trust lands.

The agreement which now

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WATERSHED CONSERVATION

(Continued from page 5)

owners from investing in improvements, and compounds the problems of land administrators.

Most of the national land reserve in the West is in use for grazing by individual ranchers, under a system which grants a revocable privilege. Under the privilege, ranchers have a rather secure tenure so far as the use of the land for grazing is concerned, but one which is clearly inferior to public requirements.

Any portion of the national land reserve that is used for grazing, is, of course, subject to reduction or elimination of grazing as may be required by Government operations. For example, some areas every year are sold or exchanged. Others are transferred into intensive Government use such as for military, wildlife, parks, or recreation. An effort is made to continue grazing where it is compatible with public uses.

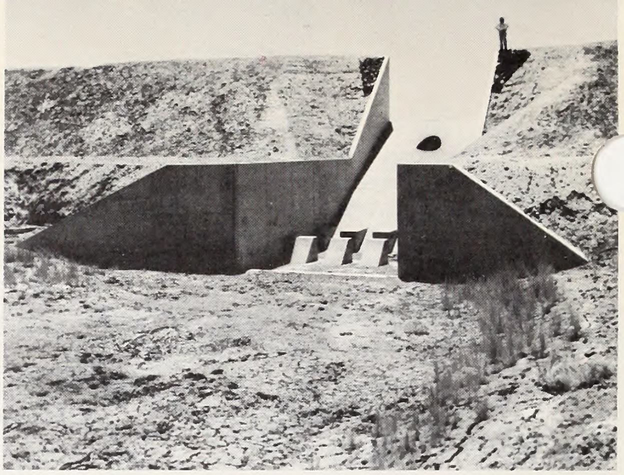
Millions of acres of the national land reserve undoubtedly will be transferred into private ownership in the next decade to keep pace with the needs of a growing population. Before sales or entries are allowed, it must be certain that they conform to the public interest.

Uncertainty as to when or where grazing lands will be eliminated reduces the interest of users in protecting the lands for the future or in investing private capital on them. Such uncertainties will be lessened as the inventory of public lands is completed and a program of balanced usage is arranged.

A major obstacle in attracting contributions to rebuilding the Federal range is the slowness with which the range is divided into management units or allotments. Prerequisite to such division is adjudication of grazing privileges. This in turn demands an adequate inventory of the lands in the dependent ranch properties. Progress is being made but further acceleration is needed.

The programs of grazing administration and watershed conservation are being pulled closer together to provide for coordination. Where substantial downward adjustments in grazing use are necessary, it is desirable to undertaken simultaneously investments and treatment measures. Such action would lessen the adverse economic effect of reduced grazing usage, and assure the investment needed to restore the land for productivity and resource protection.

As a further item of improvement, grazing administration and timber sales of the Bureau of Land Management are being tied in closer to the program of soil and moisture conservation. The specific objectives of the latter program, in common with those of other agencies, are (1) to use the public lands within their capabilities; (2) to apply treatment in accordance with needs; (3) to control surface runoff, sustained ground-water levels, and minimize erosion, flood, and silt damage; and (4) to restore depleted rangelands to productivity.



SPILLWAY on a typical BLM water management structure.

Cooperation will continue as in the past, with small watershed projects organized under the Watershed Protection and Flood Prevention Act.

We are cooperating in several watershed studies to determine the effects of grazing, the extent and character of erosion, runoff and sediment yields and other information. These studies are underway in all of the Western States, such as Willow Creek in Montana, Rio Grande Research Center in New Mexico, Sage Creek Watershed in Wyoming and San Simon in Arizona.

Typical of these studies is the Badger Wash Study Area in western Colorado. Four Federal agencies are cooperating in this project—Geological Survey, Bureau of Reclamation, Bureau of Land Management, and the Rocky Mountain Forest and Range Experiment Station of the Department of Agriculture. The study embraces the upper 4,300 acres of the watershed. The entire area is Federal range administered by the Bureau, and the Bureau will construct all improvements. The Geological Survey will install and maintain water and sediment measuring devices. The Bureau of Reclamation prepares topographic surveys. Vegetation surveys, soil surveys, and infiltration studies are the responsibility of the Forest and Range Experiment Station.

Final results of the study are not expected for some 20 years, but some findings have immediate value.

Pursuant to President Kennedy's natural resources message we have started a study to determine appropriate fees and charges for the use of public lands. Secretary Udall's 18-month moratorium on filing nonmineral applications for lands will allow the Bureau to clear up an oppressive backlog of land disposition cases. It will permit the Government to take a long, hard look at th existing framework of laws and rules for the administration of public lands.

In summary, may I say that the essence of conservation of public lands and their resources is stewardship on behalf of the public. I am glad to be a part of the conservation program—to be able to contribute to the wise use of natural resources.

With good will and understanding, I am confident that we may adjust our human institutions so as to permit us to bring about practices which physical science tells us will produce effective results if applied on the public lands.

End

NATURAL RESOURCES

(Continued from page 7)

agement plans should reconcile and balance competing demands for land use. Such plans will be based on thoroughly developed data. Such a big order will of course not be done overnight. But a program for balanced use of the public lands in the long-term public interest must not be delayed.

In all programs at every level full coordination and cooperation must be made a formal part of the program process with local, county, and State planning and development agencies, with other Federal agencies, and with the public. Special attention should be given to the significant role which the public land users have in public land conservation—a role in which many private citizens have made substantial contribution to public land and resource management.

Range and watershed conservation

The national land reserve in the western States makes up a significant part of the economic base of the western livestock industry. About 28,000 farmers and ranchers graze over 10 million livestock and wildlife use over 1½ million animal unit months of forage from these public lands each year.

To meet the Nation's needs and goals, the Department will immediately begin a comprehensive range resources inventory, giving first priority to areas not now covered by range surveys.

Range use supervision and management must immediately be strengthened and accelerated to permit basic adjudication of grazing privileges based on adequate data, to control trespass, and to study actual use and the results of intensive management.

Over 100 million acres of public lands in the West need conservation treatment and rehabilitation. Substantial capital investments in soil and water conservation and range improvement practices are needed. Land that is now producing some 17 million animal-unit-months of forage can, with the help of applied conservation technology, produce an estimated 46 million animal-unit-months of forage within a few decades. Erosion often happens with the speed of a single thunderstorm. Rehabilitation may take decades. Every delay in starting conservation projects makes the total job bigger and success more in doubt.

To meet its conservation responsibilities, the Department must accelerate programs to build 65,000 water management projects, build 115,000 miles of fences, and stop the downward trend on 29 million acres of lands that are declining in productivity with every passing day.

Much of the land administered by the Department's Bureau of Land Management is in the upper reaches of the major watersheds of the West. These lands are a vital link in the chain of water flow to farms, forests, industries and towns. Public lands should be thoroughly integrated into small watershed plans and programs. Some three-fourths of all the public lands in small watersheds in the West need rapid rehabilitation. Programs for watershed protection and development should be closely geared with those of other Federal and State agencies and private conservation practices.

MUCH BLM LAND is in the upper reaches of major western watersheds.

Revegetation efforts have been far short of replacing the annual loss of forage on declining ranges. Where forage has been lost poisonous and nuisance plants often intrude, or the land is left to the mercy of cutting wind and rain. Some 45 million acres of public lands need revegetation, to restore soil-holding plant life and build the productivity of the land.

Revegetation efforts must be expanded. Such basic capital investment in the land is repaid many times in increased productivity.

As President Kennedy said in concluding his special message on natural resources—"problems of immediacy always have the advantage of attracting notice—those that lie in the future fare poorly in the competition for attention and money. It is not a task which should or can be done by the Federal Government alone. Only through the fullest participation and cooperation of State and local governments and private industry can it be done wisely and effectively. We cannot, however, delude ourselves—we must understand our resources problems, and we must face up to them now. The task is large but it will be done."

End

RESEARCH ISLAND

(Continued from page 9)

of Idaho, and the Bureau of Land Management recognize the importance of retaining this kipuka for future research. The kipuka must remain undisturbed by domestic livestock to make future research worthwhile. However, in its present status it cannot be readily protected. Because of this, the University of Idaho called the kipuka to the attention of the National Park Service and recommended that it be included in the Craters of the Moon National Monument.

The National Park Service can protect the kipuka under existing regulations. The importance of the proposed addition to the national monument is wholly scientific. Under administration of the National Park Service, scientific studies by properly recognized agencies or organizations would be permitted. As it now stands, no control can be exercised over use of the kipuka.

The kipuka occupies a very strategic location. Other kipukas or relict areas do not occupy such favorable locations. Those which might have been protected in the past, had their value been recognized, have been altered by grazing or agricultural development. An additional aspect to consider is protection of the kipuka solely for its value as an undisturbed, natural area.

Various conservation organizations have expressed an interest in protecting the kipuka. The Nature Conservancy, an organization dedicated to preserving natural areas, has urged that the kipuka be added to the Craters of the Moon National Monument. In October of 1960, a trip was made into the kipuka by representatives of the Bureau of Land Management, National Park Service, and the California Academy of Sciences. All persons making the trip agreed that the kipuka should be protected for future scientific research.

The kipuka could be added to the monument without any detrimental effects to the present grazing situation in the area.

The kipuka provides a natural laboratory for future research work. It is still too early to determine just how the work already done will be applied to practical range management. Many yea of study will be needed before the full results ca be utilized. If range technicians and range users are to fully benefit from the research it must be maintained on a continuing basis. For this reason it is imperative that undisturbed areas be fully and constantly protected.

End

Editor's Note: We gratefully acknowledge the assistance of the National Park Service, the University of Idaho, and the California Academy of Sciences in preparation of the above article.

In certain areas in Wyoming the uranium mineralization may be associated with arsenic or selenium, both of which are extremely poisonous. Care should be exercised to avoid excessive contact with dust from rocks containing uranium minerals unless they are known to be nontoxic.

The geographic center of the State of California is located in Madera County, about 35 miles northeast of Madera.

The geographic center of Idaho is in Custer County, about 24 miles southwest of Challis.

SOIL PIT at Soil Conservation Service study site on the kipuka.

THE KIPUKA provides a natural, protected laboratory for range research.

ACTIVE ACRES

(Continued from page 11)

permits public access for hunting and fishing activities on the trust lands was completed March 14 between the New Mexico Department of Fish and Game and the State Land Office. The annual payment for these privileges is a half-cent per acre or more than $55,000. In a ruling just made by the Bureau of Sport Fisheries and Wildlife, Fish and Wildlife Service, Federal Aid for the Restoration of Wildlife funds may be used to reimburse the State Fish and Game Department up to 75 percent of this amount.

The opening of these State trust lands to sportsmen will set the stage for a broader multiple use program of benefit to an even larger segment of the State's population. In past years these areas have been closed to sportsmen by competing land-use interests, and the need for public access to this substantial acreage has been recognized as critical to sportsmen, game administrators and other recreationists.

Federal aid funds for the restoration of wildlife are derived from an 11 percent Federal excise tax on sporting arms and ammunition. The funds are administered by the Bureau of Sport Fisheries and Wildlife.

End

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Robert E. Wilber, Editor

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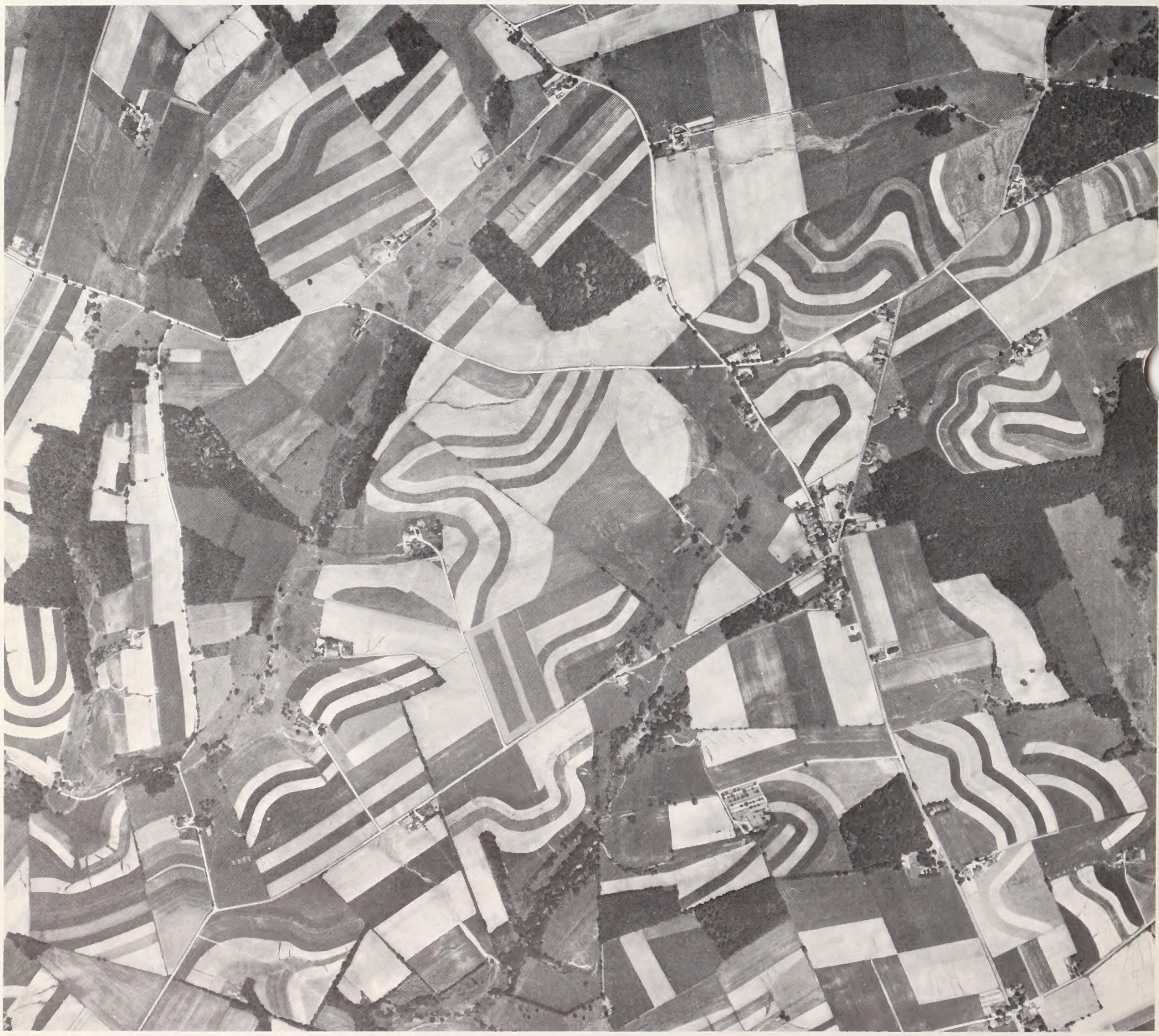

HELTER-SKELTER land patterns of the metes and bounds survey system. Land boundaries in this eastern State were not layed out under the rectangular survey system. Part of the confused pattern is due to stripcropping.